

REMARKS

The enclosed is responsive to the Examiner's Office Action mailed on June 10, 2004. At the time the Examiner mailed the Office Action claims 1-33 were pending. By way of the present response the Applicant has not added, canceled or amended any claims. As such, claims 1-33 are now pending. The Applicant respectfully requests reconsideration of the present application and the allowance of all claims.

Drawings Objections

The Examiner objected to Figures 4 and 5, the next state variables "s" within the table entries apparently should be "S", to agree with the upper-case convention of current state variables in the row headings.

Applicant respectfully disagrees that such changes are required. The distinction between upper-case "S" and lower-case "s" is intentional. Upper-case "S" is used to specify the "ideal current state". Whereas the lower-case "s" is used to specify what the "next state" should be. The "ideal current state" and the "next state" are different from each other, and hence the reason their variables (S and s, respectively) are different. Applicant respectfully requests that the Examiner withdraw these objections.

The Examiner objected to Figures 4 and 5 for the use of d and a number (e.g. d1-d6) by stating that such numbering fails to properly distinguish between same-numbered sample points of different cycles. The Examiner has suggested that "d1"

be replaced with "d1(t-1)" for d1 samples taken in the previous cycle and "d1(t)" be used for d1 samples taken in the current cycle.

Applicant respectfully disagrees that such variable designations are cause for objection. The d1...d6 designations are used to show where in a given cycle that a sample is located. There is no need to include additional variables to state whether this sample is located in a current cycle or a previous cycle. Such information is provided within the text of the description and does not require explicit inclusion in the variable designation. Applicant respectfully requests that the Examiner withdraw these objections.

The Examiner objected to Figure 2 stating that an additional sample output line is required for presenting seven samples.

Applicant respectfully disagrees that an additional output line is required. Figure 2 shows an example of a six inputs being received. Applicant is unsure why the Examiner has suggested why an additional seventh input should be incorporated. Examiner suggests including d1 of the next cycle along with d1-d6 of the current cycle. Applicant does not find this necessary as Figure 2 is showing a 6x over-sampler 202 and hence only six inputs are required. Applicant respectfully requests that the Examiner withdraw these objections.

The Examiner objected to Figure 5 by stating that a full set of edge detections relevant to the same two cycles would be available two cycles sooner if the Applicant used $d6(t-1) \oplus d1(t)$ and $d5(t) \oplus d6(t)$ for the first and last edge detections.

Applicant thanks the Examiner for the suggestion, but prefers to keep Figure 5 in its current state. Applicant respectfully requests that the Examiner withdraw these objections.

Specification Objections

The Examiner objected to the Abstract of the Disclosure. Some of the changes suggested by the Examiner have been made. However others have not. Applicant does not believe that all changes are required. Applicant respectfully believes that the Abstract, as amended, clearly conveys necessary information without requiring further modification.

The Examiner also objected to the Specification of the Disclosure. Specifically, the Examiner suggested specific changes to most of the paragraphs in the Specification. Applicant does not believe that such changes are required, except for grammatical changes that were already made. The Examiner stated that these changes should be apparent. One often suggested edit was to change "ideal sample point" to "expected ideal sample point". Applicant does not believe that "expected" needs to be appended to "ideal sample point". Applicant respectfully requests further information as to why these changes should be made. As currently amended, Applicant believes the specification meets the needs of the U.S. patent law.

Claim Rejections

35 U.S.C. 112, second paragraph, Rejections

The Examiner rejected claims 1-33 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. The Examiner has suggested specific amendments to 31 of the 33 claims.

Applicant respectfully asserts that such changes are not required. The claims, as previously presented, correctly convey the bounds of the invention.

35 U.S.C. 102(e) Rejections

The Examiner rejected claims 1-23 and 31-33 under 35 U.S.C. 102(b) as being anticipated by Van Der Tuijn, U.S. Patent 5,598,446 (hereinafter "Van Der Tuijn").

In regards to independent claim 1, the Examiner states the phrase "selecting a first data sample, from among the multiple data samples and representative of the current data unit, based on the location of edge transitions over the current and previous data cycles and the location of an ideal data sample to perform data recovery" is met by Van Der Tuijn. Pg. 18-19 of the office action mailed 6/10/04. Applicant respectfully disagrees that Van Der Tuijn discloses this limitation of claim 1. Van Der Tuijn does not disclose the selection of a first data sample based on the location of edge transitions over the current and previous data cycles and the location of an ideal data sample to perform data recovery. In contrast, Van Der Tuijn changes the phase of the extracted clock signal to an amount equal to the phase

error. Col. 1, lines 54-56. Van Der Tuijn further states that the “phase of the extracted clock signal is varied based on the center between each pair of consecutive edges...” Col. 1, lines 49-51. Van Der Tuijn further states “the current center and an immediately previous center are used to produce the phase error.” Col. 1, lines 54-55. Hence, Van Der Tuijn always uses the center location of each pair of consecutive edges to change the phase of the extracted clock signal. This is not the same as selecting a first data sample based on the location of edge transitions over the current and previous data cycles and the location of an ideal data sample as claimed in claim 1. Hence, Van Der Tuijn fails to disclose each and every limitation of claim 1. As such, Van Der Tuijn does not anticipate claim 1 under 35 U.S.C. §102(b).

Independent claims 13 and 31 contain substantially the same limitation as discussed above in regards to claim 1. As such, Van Der Tuijn also fails to disclose each and every limitation of independent claims 13 and 31. Hence, Van Der Tuijn does not anticipate independent claims 13 and 31 under 35 U.S.C. §102(b).

Dependent claims 2-12, 14-23 and 32-33 all depend on and include the limitations of independent claims 1, 13 and 31 respectfully. Hence, Van Der Tuijn also fails to anticipate claims 2-12, 14-23 and 32-33 under 35 U.S.C. §102(b).

35 U.S.C. 103(a) Rejections

The Examiner rejected claims 24-30 under 35 U.S.C. 103(a) as being unpatentable over Van Der Tuijn, U.S. Patent 5,598,446 (hereinafter “Van Der Tuijn”). The Examiner has also stated that Official Notice is given that the

advantages of implementing logic operations by using a programmed computer were well known at the time the invention was made and that such combination would be obvious to one skilled in the art.

Applicant respectfully disagrees that Official Notice shall be taken in regards to claims 24-30. Applicant believes that if Van Der Tuijn wished to implement a programmed computer to perform the invention, that such inclusion would have been disclosed. Applicant respectfully requests that the Examiner provide proof that by September 8, 1995 (the filing date of Van Der Tuijn) such an invention as disclosed by Van Der Tuijn would automatically include a programmed computer to implement the invention's logic.

In regards to independent claim 24, claim 24 includes the limitation "selecting a first data sample, from among the multiple data samples and representative of the current data unit, based on the location of edge transitions over the current and previous data cycles and the location of an ideal data sample to perform data recovery" as claimed in claim 1. As stated above, Van Der Tuijn does not disclose the selection of a first data sample based on the location of edge transitions over the current and previous data cycles and the location of an ideal data sample to perform data recovery. In contrast, Van Der Tuijn changes the phase of the extracted clock signal to an amount equal to the phase error. Col. 1, lines 54-56. Van Der Tuijn further states that the "phase of the extracted clock signal is varied based on the center between each pair of consecutive edges..." Col. 1, lines 49-51. Van Der Tuijn further states "current center and an immediately previous center are used to produce the phase error." Col. 1, lines 54-55. Hence, Van Der Tuijn always uses the

center location of each pair of consecutive edges to change the phase of the extracted clock signal. This is not the same as selecting a first data sample based on the location of edge transitions over the current and previous data cycles and the location of an ideal data sample as claimed in claim 24. Hence, Van Der Tuijn fails to disclose each and every limitation of claim 24. As such, Van Der Tuijn does not make claim 24 obvious under 35 U.S.C. §103(a).

Dependent claims 25-30 all depend on and include the limitations of independent claim 24. Hence, Van Der Tuijn fails to make claims 25-30 obvious under 35 U.S.C. §103(1).

In light of the comments above, the Applicant respectfully requests the allowance of all claims.

Comments

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of this application, the Examiner is invited to contact Michael J. Mallie at (408) 720-8300.

Respectfully submitted,

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Dated: _____

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